UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/556,133	08/29/2006	Tay Wook Kang	05-436-B	5971

20306 7590 09/05/2008

MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP
300 S. WACKER DRIVE
32ND FLOOR
CHICAGO, IL 60606

EXAMINER	
DUDA, ADAM K	

ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
09/05/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/556,133	KANG, TAY WOOK	
	Examiner	Art Unit	
	ADAM DUDA	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 2* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-2* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 November 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-2 rejected under 35 U.S.C. 103(a) as being unpatentable over **Brumfield ("Inverse Multiplexing over ATM (IMA)")** in view of Brinkerhoff **(U.S. 2002/0034162 A1).**

Brumfield discloses:

Regarding claim 1, a router **(see Brumfield; figure 5; "PathBuilder S600 Module")** for supporting an Inverse Multiplexing over ATM (IMA) function in a mobile communication network **(see Brumfield; title; "Inverse Multiplexing over ATM (IMA): A Breakthrough WAN Technology for Corporate Networks")**, said router comprising: a CPU for converting into ATM cells **(see Brumfield; page 7; "IMA products must also interoperate with legacy technologies. ATM access products with IMA should be able to interface to data, voice, and video networks without expensive upgrades to existing equipment, and without comprising the services those networks provide**

for end users. Within the IMA specification, legacy interoperability is provided via internetworking standards such as those called out by various standards bodies (ATM, Forum, ITU-T, Frame Relay, etc.). Legacy sources such as Ethernet, Frame Relay, serial applications, circuit switched, and others should be supported") from a plurality of Ethernet packets **(see Brumfield; figure 5; "Ethernet")** inputted from network processors connected to subscribers **(see Brumfield; page 7; "end users")** and outputting the converted ATM cells, and for converting into Ethernet packets from a plurality of ATM cells inputted from said CPU and distributing to the network processors the converted Ethernet packets **(see Brumfield; page 7; "For example, an Ethernet or Frame Relay interconnection lets an existing router or routed application with no ATM interface connect to an ATM access device, where its data traffic may be combined with voice and video and then sent on to the WAN using IMA"; figure 5; Ethernet sent over "leased lines or ATM services" using IMA)**; an ATM multiplexer/demultiplexer **(see Brumsfield; figure 3; multiplexing and demultiplexing of ATM cells)** connected to said CPU for multiplexing or demultiplexing the ATM cells **(see Brumsfield; page 5; "Each link is a standard T1/E1 ATM UNI, and cells are placed on the links of a per cell basis … For example, the first cell is sent on the first T1/E1 circuit, the second the second circuit, and so forth … Cells are then recombined by the IMA device at the receiving end of the stream")**; an IMA processor connected to said ATM multiplexer/demultiplexer for converting into Pulse Code. Modulation

(PCM) **(i.e. analog data such as voice or video)** packets from ATM cells inputted from said ATM multiplexer/demultiplexer and grouping the PCM packets **(i.e. analog data such as voice or video)**, and for converting into ATM cells from grouped PCM packets **(i.e. analog data such as voice or video)** and outputting to said ATM multiplexer/demultiplexer the converted ATM cells **(see Brumfield; page 7; "IMA products must also interoperate with legacy technologies. ATM access products with IMA should be able to interface to data, voice, and video networks without expensive upgrades to existing equipment, and without comprising the services those networks provide for end users. Within the IMA specification, legacy interoperability is provided via internetworking standards such as those called out by various standards bodies (ATM, Forum, ITU-T, Frame Relay, etc.). Legacy sources such as Ethernet, Frame Relay, serial applications, circuit switched, and others should be superted")**.

Regarding claim 2, the router **(see Brumfield; figure 5; "PathBuilder S600 Module")**, wherein said IMA processor monitors the status of the E1 or T1 link **(see Brumfield; page 3; "Excellent fault tolerance. ATM networks can be built with very high levels of fault tolerance at relatively low cost. IMA, for exaple, allows for load sharing and maximum network uptime")** and, upon detection of an occurrence of a failure of the link, informs an operator of the occurrence of the failure **(see Brumfield; page 8; "IMA access products from 3Com provide superiod resilience across the network, with**

an automatic mechanism for removing failed liens from an IMA bundle. Under such failure conditions, 3Com products keep good links operation using adjusted bandwidth (Figure 4). This "self-healing" capability provides a great tool for ensuring overall network resilience (Figure 5)").

Brumfield does not specifically disclose:

Regarding claim 1, a line interface unit for transmitting to a general network the grouped PCM packets via a line (e.g., E1 or T1) and outputting to said IMA processor grouped PCM packets inputted from the general network.

Brinkerhoff more specifically discloses:

Regarding claim 1, a line interface unit for transmitting **(see Brinkerhoff; figure 7; "line card(s)" for transmitting)** to a general network the grouped PCM packets via a line (e.g., E1 or T1) **(see Brinkerhoff; paragraph 0075; "Inverse Multiplexing over ATM (IMA) for up to 4 times E1/T1")** and outputting to said IMA processor **(see Brinkerhoff; paragraph 0075; "Inverse Multiplexing over ATM (IMA)")** grouped PCM packets **(see Brinkerhoff; paragraph 0389; "PCM (Pulse Code Modulation) voice samples from the PBX (Private Branch Exchange) interface are switched through the IAD's")** inputted from the general network **(see Brinkerhoff; paragraph 0071; "The IAD is a Customer Premises Equipment (CPE) solution that enables organizations to connect multiple branch offices economically to a multiservice ATM or Frame Relay Wide Area Network (WAN). It provides the means for branch end-users to combine their voice and data network**

connection on to a single low-speed network path, which can be more easily managed from the central headquarters")

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Brumfield, as taught by **Brinkerhoff**, thereby providing an Integrated Access Device for Asynchronous Transfer Mode (ATM) communications, which provides a wide variety of CPE UNI functions with substantially greater proficiency than existing devices, and a substantially lower cost **(see Brumfield; paragraph 0028)** and the advantages are achieved by the novel combinations of a RISC (Reduced Instruction Set) processor with a custom PLA (Programmable Logic Array) or ASIC (Application Specific Integrated Circuit) having a variety of performance enhancing imbedded algorithms **(see Brumfield; paragraph 0028)**.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ADAM DUDA whose telephone number is (571)270-5136. The examiner can normally be reached on Mon. - Fri. 9:30 a.m. - 7:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang B. Yao can be reached on (571) 272 - 3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ADAM DUDA/
Examiner, Art Unit 2616
29 August 2008

/Chirag G Shah/
Supervisory Patent Examiner, Art Unit 2619